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MAKING LIQUID AIR.

A SCIENTIST EXPLAINS HIS CHEMICAL DISCOVERIES.

Professor Dewar's Experiments May Prove to Be the Greatest Investigations of the Century—Powerful Gases Reduced to a Fluid State.

The Pall Mall Budget of London published an interview with Professor James Dewar on what is represented as being "a great scientific discovery," that of making liquid air. Introductory to the interview the article says that "his liquefactions of permanent gases and the use of vama to preserve great cold mark one of the most important chemical discoveries of the century." It is held by scientists that any gas may be liquefied if the pressure and cold may be obtained and a vessel of sufficient strength to withstand the great pressures.

Of the gases that may be liquefied carbonic acid gas has been found to be the cheapest and readiest made, and while it has been known for many years that it could be liquified it has generally been so prepared only in small quantities for scientific uses. The use of compressed air as a motive power has presented many difficulties, the principal one being its bulkiness; hence large vessels must be used in order to get a sufficient amount of motive power, and it is hard to make these strong enough and at the same time light in weight.

As a motive power it is used at a pressure of from 600 to 900 pounds. But if Professor Dewar has discovered an economical and ready way of liquefying it, it will tend to solve a problem in carrying a motive power in storage bulk that will be of great benefit to the students in this line. In the talk with the representative of The Pall Mall Budget, he says:

"Well, I don't think there's very much to say, because I've told all I have to tell about the matter in my two lectures, but I do believe there's a great deal more to be learned about the subject. You see, at present we've got these gases down to 210 degrees below zero, and the lowest possible temperature is 274 degrees below. If we could get some 30 degrees lower down, we might liquefy hydrogen. Hydrogen has never been liquefied in a free state yet.

"Now, it's a strange thing that air can be made into a homogeneous fluid. You would think, as oxygen can be liquefied at —182 degrees and nitrogen not until —192 degrees, that as you made the air colder and colder the oxygen would become liquid first and then the nitrogen. I saw that prediction made in a standard work only the other day. Now, I dare say, you will ask why the oxygen don't come down first."

Stepping quickly back to the desk Professor Dewar took up a pencil and began to draw with rapid strokes on the back of a letter. The diagram when it was finished looked more like the law of diminishing returns turned up on one side than anything else that I am acquainted with. While he drew he rapidly explained how the influence of atmospheric pressure on the different volumes of nitrogen and oxygen in air makes them boil almost exactly at the same temperature. As he made each point he frowned a little, drawing up the wrinkles between his eyes. "Now, that, in the old theological days, would have been taken as a providential dispensation. The strange thing is that when liquid air evaporates again they are under the same pressure, and the nitrogen goes off first, as you would expect.

"Ozone can be liquefied by acting on the vapor given off from liquid oxygen by electricity. It is a splendid dark blue color, almost as dark as indigo. Ozone has not the same molecule as oxygen, and the electricity breaks up three twos into two threes. That is the secret of it. The queer thing about liquid ozone is that when it goes back into gas again it explodes. You wouldn't think it, but it is stronger than dynamite as an explosive. It's simply because the ozone goes back into the molecular form of oxygen so fast. The force that comes from the electricity makes it explode without meeting with any outside body. It's a tremendous explosive.

"We have discovered that liquid oxygen acts as a lens. It is so transparent to heat, so to speak, that even at 182 degrees below zero you can focus heat on it from one side and light a piece of paper by it on the other. You know that's just what happens in the earth. The sun's heat gets focussed on to the earth through the lens formed by the vacuum of space, which is so cold that it hasn't any temperature at all—absolutely zero."

Professor Dewar gave a lecture on "Liquid Air" at the Royal institution in the presence of the Prince of Wales, the Duke of York, Lord Salisbury and other notable persons. He showed that by the withdrawal of heat the air is converted into a liquid with total loss of chemical properties, incapable of supporting combustion, or of entering into combination even with phosphorus and sodium, while certain physical properties remain. The conversion of oxygen into ozone was also described, and the retention by oxygen of its peculiar optical properties at the lowest temperature was demonstrated by the very dense and well defined bands of its spectrum. In ordinary conditions oxygen shows no unreasonable thermal absorption, but at low temperature its thermal absorptive power becomes manifest.

Thwarting an Enemy.

Sardanapalus, the luxurious oriental monarch, finding himself hard pressed by his enemies, gathered his guards, his wives, concubines and children together, with all his treasures, and set fire to the building, thus thwarting the hope his foes entertained of taking him alive.—St. Louis Globe-Democrat.

ISAAC'S LITERARY OPPORTUNITY.

Just Now He Is a Printer's Devil, but He May Develop Some Day.

"What's your boy Ike doin daown t' Boston, Jerome?" asked the Hilldale postmaster one stormy night, while he and Jerome Sargent waited for the coach to arrive. Mr. Sargent had returned from a visit to Boston the day before, and it was vaguely reported in the village that "he'd had great doin's daown b'low with Ike."

"Isaac," replied Mr. Sargent in a tone of ill concealed pride, "is right in th' midst o' things, I ken jest tell ye! M' wife, she's allus held to it that Isaac hed got t' be some kind of a lit'rary feller when he'd got his growth, an I declare for't, it does appear 's ef he was in a pooty fa'r way t' kerry aout his ma's d'sires. He's jest right in amongst a mess o' th' lit'rary folks th' hull 'durin time; sees 'em real informal day in an aout!"

"Do tell!" gasped the postmaster, with an expression of the greatest and most flattering amazement on his sharp featured countenance.

"Yes, sir," said Mr. Sargent, seeing that he had made a decided impression on his listener. "I was raound with Isaac quite a little spell one mornin, but lawzee, I couldn't stand no sech flusterin, hurryin times as he hes right along! 'Twould kill me right off, or anyways I shouldn't never be fit for anythin agin after a week o' sech work! But Isaac likes it, an seems t' feel real easy an onconcerned 'baout gettin raound. There's one thing his ma an I would like t' hev changed though, that's th' short rations o' time they give him t' git from one place t' another an back agin."

"Hes t' hurry, doos he?" inquired the postmaster.

"He cert'nly doos," replied Mr. Sargent, crossing his hands on his knees and surveying the effect meditatively as he talked. "Isaac's a likely boy at learnin, an they'd orter give him a little more of a chance, seems 's ef."

"Well, naow, what is Ike doin precisely?" inquired the postmaster after a pause, during which he had waited patiently for Mr. Sargent to give some more definite information as to his son's pursuit, which had always been shrouded in mystery.

"Why, I ain't cal'latin t' tell ye jest th' name they give t' a boy in Isaac's p'sition," remarked the father prudently. "It w'd strike ye kind o' queer, same as it did me fust off, till Isaac explained 'baout it? I ain't deemed it hardly wise t' tell his ma even jest yet, for she's kind o' notional, an 'taint a pooty name no two ways 'baout it! But it appears 't it's customary, an don't mean what ye might s'pose or anythin like it. What Isaac doos is t' kerry what he tells me they call 'proof'—the literary folks do—back an forth betwixt them that writes an them that prints. Jest think o' that! Right in with 'em all, Isaac is!"

"Do th' folks that he works for set much by him?" inquired the postmaster in a tone of great respect.

"Th' printin folks set a heap by him," replied Mr. Sargent. "It's 'Isaac' here an 'Isaac' there all th' time with them. Isaac says th' writin men don't seem t' take much to him, but I told him that ef he was a good boy an did his work well they'd git so they'd feel real friendly to him an be glad t' see him whenever he come in, same as th' printin folks are. An I said t' him, sort of encouragin, for I thought he seemed kind o' daoubtful, 'Why, Isaac, what a good thing it w'd be for ye ef some o' them writin' folks sh'd take a real shine t' ye an have a little talk with ye naow an agin whilst they was finishin up their writin for ye t' take off (for Isaac says they never hev it done when he gits there hardly). P'r'aps they might kind o' set forth t' ye haow they write, an so on,' says I. Isaac didn't seem t' think 'twas likely, but I do, an so doos his ma!

"When a boy," said Mr. Sargent, rising as he heard the sound of the approaching coach, "hes a chance like Isaac's, ther's no knowin what may come t' him!"—Youth's Companion.

Men Who Abuse Privileges.

Chambermaids at swell hotels soon become great students of human nature. It does not take them long to size up either the social or financial standing of the guests.

For instance, one showed her acumen in this direction the other day when I happened to call her attention to the array of six towels on the rack over the washstand in the bathroom.

"Think that extravagant?" said the bright young woman. "Well, don't you make any mistake!"

"But it most cost the house a lot for laundry bills," I ventured.

"Not a bit of it," she replied vivaciously. "Most of our trade here is first class. No one ever uses a lot of towels unless they are not used to them at home. Men who are accustomed to the luxuries of life do not take advantage of the supply. It is only the class who usually wipe their faces on roller towels who abuse our generosity."

And doubtless the girl knew what she was talking about.—New York Herald.

He Had Gone Prepared.

"Ask father," she whispered softly, and he kissed her as he headed for the library. Ten minutes later she glided in and there found the old gentleman nursing his great toe and freighting his groans with whispered oaths. Then she knew that the destiny of her sweet young life was yet in abeyance, and she took a quiet sneak without uttering a word.—Detroit Free Press.

May Be Worse.

"What is more awful to contemplate," said a lecturer, glaring about him, "than the relentless power of the maelstrom?"

And a henpecked looking man in the rear of the building softly replied, "Femalestrom."—Exchange.

Farewell.

Of all the words of grief and woe where misery doth dwell
The saddest intonation lies within that one—farewell.
It serves to sever souls for aye, for who is there can tell
If hearts will ever meet again when once they say farewell?
It carries not a tone unkind; no wrath does it compel;
'Tis breathed from out the bosom's depth, that deep, that long farewell.
The aching heart is rent in twain and lies a shattered shell;
Then, with a longing, anguished cry, it says its last farewell.

—Sir Walter Scott.

The Milk of One Rare Cow.

Robert Hansborough of Chillicothe, O., is the owner of the "eighth wonder of the world," a cow that gives coal black milk. The cow is a mixture of Jersey and Durham and was raised on the Hansborough farm, as was also her mother and many sisters, none of whom exhibited any peculiarity in the color of their milk. Mollie, as this phenomenal creature is called, has reared five or six calves, all of which have lived and grown fat on the black milk.

The milk produces a fair amount of cream. This cream is a trifle lighter in color than the milk itself, and when churned makes a kind of butter that resembles a thick mixture of coal tar. Paradoxical as it may seem, this butter is as palatable as though of a golden yellow, and it is said to be highly relished by the whole Hansborough family.

At first, when the peculiar color of Mollie's milk was discovered by the person to whom was allotted the task of "breaking the cow in," the family was afraid to use it in any way. When they saw that the calf was waxing fat on the liquid tar, the younger members of the family overcame their prejudices, and within a few days the milk was being used just the same as if it had been of the regulation color.

Chemists of New York, Washington and Richmond have analyzed both the milk and the butter, but declare that they can detect nothing that in any way accounts for its color.—Cor. Chicago Mail.

Palate Deformity and Mentality.

At the meeting of the City Medical society a highly interesting and profitable discussion was had on the subject of "The Diagnostic Value of Deformed Palate Arches." Under this formidable title is concealed a subject of deep popular interest. The plain English of it is after this sort, "How far may deformity in the palatal arch be regarded as an indication of mental deformity?"

It appeared that this subject, which has heretofore been the study of specialists largely, is one worthy of wider investigation; that deformity in the palate may usually be taken as an indication of insufficient development of the brain or skull.

Statistics were read showing that palatal deformity of this sort exists in about 8 per cent of healthy, mentally normal persons, in 45 per cent of insane, in 58 per cent each of drinkers and inebriates, 50 per cent of blind and of deaf mutes and 75 per cent of criminals in prison.—Hartford Post.

Boston English.

George—Why so gloomy?

John—I am desperately in love with a Boston girl, and she said something last night that fills me with alternate hope and despair, because I don't know what she meant. She never sounds the "r," and she always gives "a" the broad sound.

George—Well?

John—Well, I don't know whether she was talking about her heart or her hat. —New York Weekly.